



# TEST REPORT

**Report No.** ..... : **CTC20230976E12**

**Applicant** ..... : **Lumi United Technology Co., Ltd**

**Address**..... : Room 801-804, Building 1, Chongwen Park, Nanshan iPark, No. 3370, Liuxian Avenue, Fuguang Community, Taoyuan Residential District, Nanshan District, Shenzhen, China

**Manufacturer**..... : Lumi United Technology Co., Ltd

**Address**..... : Room 801-804, Building 1, Chongwen Park, Nanshan iPark, No. 3370, Liuxian Avenue, Fuguang Community, Taoyuan Residential District, Nanshan District, Shenzhen, China

**Product Name** ..... : **Temperature and Humidity Sensor T1**

**Trade Mark** ..... : **Aqara**

**Model/Type reference**..... : WS-S01

**Listed Model(s)** ..... : WSDCGQ12LM-G0, WSDCGQ12LM, TH-S02D

**Standard** ..... : **AS/NZS 2772.2: 2016 + Amd 1: 2018**

**Date of receipt of test sample...** : Apr. 16, 2019

**Date of testing**..... : Apr. 17, 2019 ~ Apr. 27, 2019 and  
Apr. 22, 2023 ~ Apr. 28, 2023

**Date of issue**..... : May. 05, 2023

**Result**..... : **PASS**

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*Totti Zhao*

**Testing Laboratory Name** ..... : **CTC Laboratories, Inc.**

**Address**..... : 2/F., Building 1 and 1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Longhua District, Shenzhen, Guangdong, China

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# 1. TEST SUMMARY

## 1.1. Test Standards

The tests were performed according to following standards:

[AS/NZS 2772.2: 2016 + Amd 1: 2018](#) – Radiofrequency fields, Part 2: Principles and methods of measurement and computation - 3 kHz to 300 GHz

## 1.2. Report version

Revised No.	Date of issue	Description
01	May. 05, 2023	Original

## 1.3. Test Facility

### CTC Laboratories, Inc.

Add: 2/F., Building 1 and 1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Longhua District, Shenzhen, Guangdong, China

### Laboratory accreditation

The test facility is recognized, certified, or accredited by the following organizations:

#### A2LA-Lab Cert. No.: 4340.01

CTC Laboratories, Inc. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

#### Industry Canada (Registration No.: 9783A, CAB Identifier: CN0029)

CTC Laboratories, Inc. EMC Laboratory has been registered by Certification and Engineer Bureau of Industry Canada for the performance of with Registration NO.: 9783A on Jan, 2016.

#### FCC (Registration No.: 951311, Designation Number CN1208)

CTC Laboratories, Inc. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 951311, Aug 26, 2017.



## 2. GENERAL INFORMATION

### 2.1. Client Information

Applicant:	Lumi United Technology Co., Ltd
Address:	Room 801-804, Building 1, Chongwen Park, Nanshan iPark, No. 3370, Liuxian Avenue, Fuguang Community, Taoyuan Residential District, Nanshan District, Shenzhen, China
Manufacturer:	Lumi United Technology Co., Ltd
Address:	Room 801-804, Building 1, Chongwen Park, Nanshan iPark, No. 3370, Liuxian Avenue, Fuguang Community, Taoyuan Residential District, Nanshan District, Shenzhen, China

### 2.2. General Description of EUT

Product Name:	Temperature and Humidity Sensor T1
Trade Mark:	Aqara
Model/Type reference:	WS-S01
Listed Model(s):	WSDCGQ12LM-G0, WSDCGQ12LM, TH-S02D
Model Difference:	All these models are identical in the same PCB, layout and electrical circuit, only named differently for marketing purpose.
Power supply:	3Vdc from button battery
Hardware version:	V1.0.1
Software version:	V1.0.1
<b>Technical index for Zigbee</b>	
Modulation:	O-QPSK
Operation frequency:	2405-2480MHz
Antenna type:	PCB Antenna
Antenna gain:	2dBi



### 3. TEST ITEM AND RESULTS

#### 3.1. RF Exposure

##### Limit

AS/NZS 2772.2: 2016 + Amd 1: 2018 APPENDIX E3.2

Exposure category	Frequency range	E-field strength (V/m rms)	H-field strength (A/m rms)	Equivalent plane wave power flux density $S_{eq}$ (W/m <sup>2</sup> )
Occupational	100 kHz – 1 MHz	614	$1.63/f$	—
	1 MHz – 10 MHz	$614/f$	$1.63/f$	$1000/f^2$ (see note 5)
	10 MHz – 400 MHz	61.4	0.163	10 (see note 5)
	400 MHz – 2 GHz	$3.07 \times f^{0.5}$	$0.00814 \times f^{0.5}$	$f/40$
	2 GHz – 300 GHz	137	0.364	50
General public	100 kHz – 150 kHz	86.8	4.86	—
	150 kHz – 1 MHz	86.8	$0.729/f$	—
	1 MHz – 10 MHz	$86.8/f^{0.5}$	$0.729/f$	—
	10 MHz – 400 MHz	27.4	0.0729	2 (see note 6)
	400 MHz – 2 GHz	$1.37 \times f^{0.5}$	$0.00364 \times f^{0.5}$	$f/200$
	2 GHz – 300 GHz	61.4	0.163	10

##### MPE Calculation Method

$$S = \frac{PG}{4\pi d^2}$$

Where:

S = power flux density, in watts per square meters

P = power transmitted, in watts

G = antenna gain

d = distance from antenna, in meters

$\pi$  : 3.1416

**Test Results**

Frequency (MHz)	Antenna Gain (dBi)	Maximum Power EIRP(dBm)	Tune up tolerance (dBm)	Max. Tune up Power (dBm)	d (m)	power flux density (W/m2)	Limit (W/m2) @ power flux density
2405	2	10.92	11±1	12	0.2	0.005	10
2440	2	10.91	11±1	12	0.2	0.005	10
2480	2	10.81	11±1	12	0.2	0.005	10

**Note**

For a more detailed features description, please refer to the RF Test Report.

\*\*\*\*\*THE END\*\*\*\*\*

